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ABSTRACT

Literacy is a social practice central to sharing of knowledge and skills in the workplace. Workplaces increasingly demand workers who take on multiple roles and share and manage knowledge in new ways, so high levels of worker literacy and worker collaboration are increasingly important. Workplace training must facilitate development of active and interactive literacy and numeracy skills. An active literacy is in turn a central part of effective learning. Under the Australian National Training Framework, private training organizations predominantly use industry training packages to provide vocational training in Australia. Since their staff may not be trained in teaching and learning practices, effectiveness of workplace training depends on how well they interpret and deliver training packages. A study of horticulture industry trainers and trainees has found that trainees learn in collaboration with peers in the workplace and appreciate practical, on-the-job training; speaking and listening skills are vital tools in conversations about the process of training; theoretical and practical training must be balanced; professional development through informal networks and formal training workshops is important for trainers; equitable access to training requires bridging courses and support throughout training; ongoing review processes for training packages are important; and trainers should be supported with adequate resource material. (Contains a 57-item bibliography.) (YLB)

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Putting it all together:

Learning for work and learning about work in the horticulture industry

Ruth Trenerry
University of South Australia

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Ruth Trenerry
Principal researcher and author

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List of Acronyms

ALNARC	Adult Literacy and Numeracy Australian Research Consortium
ANTA	Australian National Training Authority
AQF	Australian Qualifications Framework
CBT	competency-based training
IALS	International Adult Literacy Survey
ITAB	Industry Training Authority Board
NTF	National Training Framework
NTRA	National Training Reform Agenda
OECD	Organisation for Economic Cooperation and Development
OH&S	occupational health and safety
RPL	recognition of prior learning
RTO	registered training organisation
VET	vocational education and training
WELL	Workplace English Language & Literacy
ZPD	zone of proximal development

Executive Summary

This report discusses literacy as a social practice that is central to the sharing of knowledge and skills in the workplace. Workplaces increasingly demand that workers take on multiple roles and share and manage knowledge in new ways. In this context high levels of worker literacy and worker collaboration are increasingly important. It is essential that workplace training facilitates the development of active and interactive literacy and numeracy skills. An active literacy is in turn a central part of effective learning.

Under the National Training Framework, vocational training in Australia is predominantly provided in the workplace by private training organisations using industry training packages. Training packages set out competency standards that workers should meet, but how these competencies are acquired is not specified. It is therefore the registered training organisation that determines the process of learning. The staff of the training organisation may not themselves be trained in the practices of teaching and learning. The effectiveness of workplace training therefore depends on how these staff interpret and deliver the training packages.

This study of trainers and trainees in the horticulture industry found that:

- Trainees learn in collaboration with their peers in the workplace and appreciate practical, on-the-job training.
- Speaking and listening skills are vital tools in conversations about the process of training.
- There needs to be a balance between theoretical and practical training.
- Professional development is important for trainers, both through informal networks and through formal training workshops.
- Equitable access to training requires bridging courses and, at times, support throughout the training process.
- Ongoing review processes for training packages are important.
- Trainers should be supported with adequate resource material.

Training in and for the workplace is mediated through literate (also involving numerate) practices. Registered training organisations should be supported and encouraged to foster a climate that develops literacy and numeracy practices, thus facilitating effective workplace learning.

Introduction

This paper reports upon a research project that investigated the literate and numerate practices of staff and trainees in a training program in the horticulture industry. It also includes a discussion of literacy in workplace learning.

In this study **literacy** is understood as a **social practice**. Language and literacy are "always and everywhere integrated with and relative to *social practices* constituting particular discourses" (Gee 1992: xviiii). The study presents trainers and trainees as engaging in a **multiplicity of literate and numerate practices** as they engage in the training process. These practices merit attention as a way to understand good practice in industry training. Workplace literacy practices can be thought of as "rich and meaningful formulations" (Castleton 1999: 22) in any work site. Work is not just achieved through individual performance, rather a "sharing of knowledge and skills" constructs work in new times (Luke 1998). Gowen (1992) confirms the view that literacy skills that are determined through an audit of work practices, and represented in discrete units, may not deliver effective work practices for industry in the post-Fordist era, when "productive diversity" (Cope & Kalantzis 1997) is an appropriate response to "a rapidly changing world" (Gowen 1992: 15).

Many writers connect literacy and learning (Heath 1983; Street 1984; Vygotsky in Stierer & Maybin 1994; Gee, Hull & Lankshear 1996). Learning is accepting and using new skills, understandings and knowledge. One tool for learning is an active literacy drawing from a range of competencies to understand language communication. Learning effectively at and for work requires a training culture that both reflects the cultures of work and facilitates the development of new skills for new times. It is hoped that this paper will provide some insights into literacy and workplace learning for one group of learners (including coordinating trainers and trainees) at a time when new industry training packages are being implemented.

Organisation of the paper

The paper has two parts. The first is a conversation about literacy, learning, work and workplace learning in new times. Here I draw from scholarly and applied resources on the topics of literacy and learning. Included is an overview of the organisation of workplace learning in Australia since the award restructuring of the late 1980s and early 1990s.

The second part offers findings from a recent investigation of industry teaching and learning. The study examined the educational and management strategies that influence trainee learning in the workplace, and documented the take-up of industry training package units. Three research sites offering training towards national qualifications through the agriculture and horticulture training packages were chosen for the study. The training providers involved in the

research were accredited to deliver and assess training for their specific industry.

Research informants included people involved in the many stages of on-the-job training: workers/learners, workplace trainers, training support personnel (including a literacy support person) and managers/training coordinators/supervisors.

1. Literacy, Learning and Work

Locating the Context of Workplace Learning

In this paper I want to think about the role of language, literacy and numeracy in workplace learning in these times when "the new work order" encourages "new workers and changing work patterns" (Gee, Hull & Lankshear 1996: xiv). My paper has as its origin an investigation of the efficacy of language, literacy and numeracy competencies embedded into the units of industry training packages. My research interest has, however, moved from disentangling discrete literacy and/or numeracy skills to an emphasis on the **role of language, literacy and numeracy** as **vehicles for learning** in the units of competence.

The understanding here is that specific literate and numerate practices enable learning, and that the learners' ability to manage their learning by engaging multiple literacy and numeracy skills, is the key to the learning process.

New workers, changed working conditions and changing work patterns are the focal points of this discussion about work and learning and the role of literacy and numeracy practices. The ways in which new work practices and new training agendas are taken up will provide the lens for this investigation. And the voices of research participants in this text will allow the reflections to move from theoretical and policy considerations to the everyday practices that seek to meet the demands of the new workplaces. For example, when thinking about work teams one trainee (also a work site supervisor) reflected upon his management role in this way:

> *Well ... that's just basic supervising people, organising daily, weekly, yearly programs, sorting out OH&S issues, even HR* [human resource] *issues, just basically looking at ways to continue to improve the team with the team involvement, you know, looking at better ways, making sure that they are having plenty of input. They're not just told, "This is what you are going to do." Let them have some input and actually enjoy the job and get better outcomes out of it.*

Vocational training in Australia is currently organised under the **National Training Framework** (ANTA 1997) which is a collaborative government-industry project. An open training market locates delivery of training with registered providers (registered training organisations or RTOs), and training is predominantly provided on the job. Training packages have replaced curriculum-based industry training while holding on to the concept of competency-based training (CBT).

The concept of the **training package** is central to the National Training Framework. Training packages have been progressively adopted by the vocational education and training sector since 1997. The packages specify training to industry standards in an endorsed component consisting of industry competency standards, assessment guidelines and qualifications.

Non-endorsed components comprise support materials consisting of learning resources.

This new method of packaging training requires further scrutiny. It has been described as needing "substantial changes [in] educational delivery and assessment, new collaborative arrangements with industry and modifications to the workforce in provider organisations" (Mitchell & Young 2001: 3). I hope that the research component of this study will contribute to these understandings. It builds upon earlier studies (e.g. Sanguinetti 2000) investigating the inclusion of literacy and numeracy competencies in training packages as experienced by a number of Australian training and work sites. Findings from these studies indicate that the development and maintenance of quality training package delivery warrants further research interest.

So, the study aims to examine the educational and management strategies that influence trainee learning in a workplace training site as facilitated by a registered training organisation. It also takes account of the management strategies that construct a culture of learning in the work site. Throughout, the paper will allow the range of research participants engaged in the study (the trainees, trainers, training package coordinators and resource persons, workplace literacy support persons and skills centre managers) to talk about their understandings of the industry training packages, and the teaching and learning strategies they employ as training facilitators. Central to the discussion are the literate practices integral to training.

Training package units set out the **skills** that an employee is expected to develop, but not the **learning process**. "The concept of a competency focuses on what is expected of an employee in the workplace *rather than the learning process* (my emphasis), and embodies the ability to transfer and apply skills and knowledge to new situations and environments" (ANTA 1998: 1). This research, on the other hand, demonstrates that the learning process is synchronous with training in the workplace.

How then do trainers respond to the training packages? What instruction or teaching practices should they adopt so that their trainees can reach accreditation goals? Literacy and numeracy have a major role here. Literacy and numeracy practices are integral to the process of acquiring skills, knowledge and understandings; they are inseparable from the social practices that make up the discourse that does the work of learning in training.

This study maps some of the learning practices and strategies, both formal and informal, that are utilised as a medium for learning in the workplace. The focus will be on the strategies that are specifically related to the definitions of literacy and numeracy operational in the research sites.

The findings provide insights about learning, about workplace learning and about literacy and numeracy as vehicles for learning with the new training packages.

Naming(s): Understandings of literacy

I have claimed that this study examines the ways literacy and numeracy function as vehicles for learning with training packages. It is therefore timely to examine how we understand the word **literacy**. Today literacy is defined as more than the ability to manipulate the written text as a reader and a writer. Rather, "the multiplicity of communications channels and increasing cultural and linguistic diversity in the world today call for a much broader view of literacy" (New London Group 1995: 1). The terms 'multiliteracies' and 'literate practices' are used to emphasise that the literate person is able to understand and have competent control of the specific literate (including numerate) practices relevant to their personal, social and work worlds.

The New London Group (1995) and many other recent movements (as documented in Gee 2000) have framed literacy as a social practice (Gee 1992) rather than as competence in discrete skills of a socially and culturally disconnected individual. For Gee (2000) and others the literate and numerate abilities of individuals are contingent upon their positioning within a particular social group and, therefore, an individual replicates the normal behaviours offered within this context. The work of poststructural/postmodern theorists has taught us to see the language used as the mode of expression within a group as the discourse pertaining to the way the group operates or interacts (drawing from the work of Bourdieu, in Grenfell & James 1998).

Gee (1992) tells us that 'discourses' are characteristic (socially and culturally formed, but historically changing) ways of talking and writing about, as well as acting with and toward, people and things (ways that are circulated and sustained within various artefacts, images, social practices and institutions, as well as in moment-to-moment social interactions). Through these discourses certain perspectives and states of affairs come to be taken as 'normal' or 'natural' and others come to be taken as 'deviant' or 'marginal' (e.g. what counts as a 'normal' prisoner, hospital patient or student, or a 'normal' prison, hospital or school at a given time and place) (Gee 2000: 3). Luke and Freebody agree:

> *Literacy ... is about the institutional shaping of social practices and cultural resources, about inducting successive generations into particular cultural, normative ways of handling texts, and about access to technologies and artefacts (e.g. writing and the Internet) and to the social institutions where these tools and artefacts are used (e.g. workplaces, civic institutions).* (Luke & Freebody 1999: 2)

It is here that the work of the sociologist Bourdieu (in Grenfell & James 1998) is instructive in helping to understand the dynamic interface between the 'cultural capital' of the learner and the representations offered in the learning (or training) environment.

Rather than simply focusing on print-based text, literacy pedagogy transforms into an understanding of the "dynamic representational resources" constitited from "language and other modes of meaning" (New London Group 1995: 6).

Education and training will, of necessity, work in different ways, in both the construction of programs and resources and in the teaching and learning practices with which educators and learners engage.

What are the implications of these understandings about literacy for workplace training? There are two ways to think about literate and numerate practices in the training context. Firstly, it is important to identify the language, literacy and numeracy skills embedded in workplace tasks within the training package units across the Australian Qualifications Framework (AQF) levels.

> *From the factory floor to the highest level of management language, literacy and numeracy skills influence the performance of workplace tasks.*
>
> (ANTA 1998: 1)

Trainers need to use effective teaching strategies to facilitate the learning of these language and literacy skills. One way to think about literacy skills and levels of access to a text is to use what Luke and Freebody describe as the four 'roles' of the literate reader: namely code breaker, meaning maker, text user and text critic (Luke & Freebody 1999: 1). The four roles enable a breakdown of the skills and understandings required to access a specific text. The first emphasises the need to understand alphabet symbols used to construct words (coding competence). The second is to understand what the text means (semantic competence), next is to apply the meaning in a specific context (pragmatic competence) and, finally, critical competence means understanding the positioning of the text in the wider discourse.

Secondly, to draw on the idea of semantic, pragmatic and critical competence, language, literacy and numeracy become part of the discourse of training utilised in the teaching-learning exchange. This means the language used to talk about the training and the language of training (Gee 1992). Learning involves communicative interactions and these are often literate interactions. Falk (1999) refers to the knowledge and identity resources underlying these interactions as 'cultural capital'. This is the 'capital', including linguistic capital that individuals take into training (or work or social) contexts and that may or may not be congruent with the particular environment. For these interactions to be successful, there must be effective learning through appropriate literate practices.

Work

Work at this time is undergoing rapid change. Changes are occurring at three levels:

> *We are living in an era of unprecedented global changes and changes in the world of work. Technological innovation is moving more rapidly than ever before. So are the forms of human organization in workplaces and the relationships that are established with the clients that workplaces serve.*
>
> (Cope & Kalantzis 1997: 1)

The way we work is changing. The industrial or Fordist workplace, with its specific conditions of labour organisation, management structure and use of technology is, in many industries and workplaces, moving to a post-

industrial/post-Fordist phase (Cope & Kalantzis 1997). The post-Fordist workplace is characterised by organisational structures that require a differentiated work culture, with complex and multiple roles for workers within the organisation, and a flattened hierarchy demanding collaborative teamwork with a workplace culture of shared values, interests and experiences. Moreover, outside the workplace there are numbers of working-age adults unable to gain paid employment in a competitive work environment.

The workplace is further characterised by flexibility, being open to local and global market forces. It has become an increasingly casualised and therefore mobile workforce, one that can be brought in to do a job and then divested when the job is done. Both access to, and skills to manage new technological forms and associated knowledge practices are also very much part of the new work conditions. In fact many workplaces organise around the movement and management of knowledge, and "knowledge workers [who] can take their knowledge and sell it to the highest bidder" (Gee, Hull & Lankshear 1996: 66) are valued in the new work order, as "all workers ought to be entrepreneurs".

To participate in a knowledge-based economy requires increasingly complex skills, among which literacy is rated highly. The International Adult Literacy Survey (IALS) conducted by the OECD in 1995 indicates that today's workers must have both high levels of education and the "ability to adapt, learn and master new skills quickly and efficiently" (OECD 2001: 2). The question of how these new practices are to be taken up is recognised as the project of award restructuring of the late 1980s and early 1990s. Here we turn specifically to the idea of workplace learning and the evolving arrangements for training/learning for work and at work. Gowen (1992: 87) would caution, however, that the "ways of constructing and displaying knowledge about work-related tasks are not the same for all", and the idea of what knowledge practices and what literate practices will become is the focus of the latter part of the next section.

Learning Work

> *The (institutional) constraints on citizen/worker/learners are enacted through powerful practices of governance, not only through VET, but also through the (reformed) health and welfare systems and through schooling.*
>
> (Butler 1998: 9)

What are the present constructions of learning in and for the workplace in Australia? Learning for work and workplace learning have a set of arrangements and histories that, although not the focus of this paper, need to be set out to assist understanding of workplace learning and the centrality of multiple literate practices in vocational training.

The first question to consider is how recent Australian governments (Hawke/Keating Labor and Howard Liberal-Coalition governments) have responded to the changing world economic environment, often termed 'globalism', in relation to workplace training in the 1980s and early 1990s. Labour market and workplace reforms in this new work order "demanded that

vocational education and training also change in order to be compatible and supportive of the broader objectives of industry restructuring" (McQuirk 2000: 10). It was the National Training Reform Agenda (Hawke/Keating Labor Government) that provided the nomenclature for the industry training initiatives. The NTRA had five general themes:

- nationally consistent competency-based training;
- national recognition for competencies however attained;
- an open training market;
- fair participation in vocational education and training;
- an integrated entry-level system. (After Brown in McQuirk: 10)

Field (1996: 5) specified the preferred outcomes of industrial award restructuring that were a strong part of the workplace agenda throughout the 1990s. He stated that the most significant change that can be effected through award restructuring is the creation of "more productive forms of work organisation and management" in "an organisational culture that balances the needs of workers and management and emphasises productivity, commitment, cooperation and participation". According to Field (1996: 4), the main factors affecting skill training and learning are the intersections between skill formation, skill training and learning, technology, work organisation and industrial relations. Others (Newman 1998: 110) argue that Field does "not consider training as a potential process for actually changing the power structures in the workplace", but do recognise the clarity of Field's industrial training model.

Following the election of the Federal Coalition Government in 1996, a new structure for vocational training was introduced. This framework is known as the National Training Framework. It has a strong emphasis on marketisation and includes:

- revised and simplified arrangements for the recognition of training organisations and training products, assuring quality of training;
- training packages that integrate nationally available training products, including new assessment arrangements with competency standards.

(After Brown in McQuirk 2000: 11)

CBT in Industry Training Packages

Competency-based training was adopted in the early 1990s as the organising principle for the delivery of training in the vocational education and training (VET) sector, alongside notions of self-paced delivery, national standards and recognition of prior learning. The concept of competency reflects what is expected of an employee in the workplace. Competency standards in training packages reflect specific sets of knowledge or skills and the application of these knowledges and skills to the standard required in the workplace. There are four components of competency that appear in training package units or unit groups. These are task skills, task management skills, contingency management skills and job or role environment skills.

Under competition policy training, the training package is delivered by a registered training organisation, TAFE institution, private provider or community organisation. Implementation guides to assist trainers understand the structure of training packages, set out in detail:

- the relationship between the current courses and the new qualifications;
- the relationships between existing modules and new units;
- advice to RTOs about the qualifications they are authorised to issue;
- identification of regulations or required licences;
- nominal duration of units and qualifications;
- sample training programs;
- identification of current and new resources that can be used to deliver the training;
- identification of approved training schemes for apprenticeships.

Competency-based training was adopted under the National Training Reform Agenda to organise and deliver workplace training in both on-the-job and off-the-job settings. CBT is also central to the training package model (ANTA 1997), in which units of competence are packaged according to individual industry training needs, and skill development is aligned with specific work tasks. The model is primarily designed for delivery in the work site.

Learners and Learning in the Workplace

Having briefly placed vocational training arrangements in context, I now want to discuss the notion of **workplace learning**, including learning for and learning at work. Two important questions for this study are: How are workplace learning and learning for work experienced under the current training arrangements? And, more specifically, what are the strengths and limitations inherent in this structure? Also of interest are the literate and numerate practices that are valorised or not in the National Training Framework's industry training packages.

Work-based learning is presently constructed in terms of skills-based learning where the products of learning (learning outcomes) have prominence. Competency-based units describe the 'what' of learning (Newman 1998: 125). Competencies are written as descriptors, nominating the actions workers will be able to perform as a result of learning in outcome statements. Words such as 'list', 'describe', 'state', 'demonstrate' and 'identify' represent what is to be learnt as learning outcomes. According to Gagne words such as 'know' and 'understand' are too "vague and ill-defined to be useful in describing the conditions of learning" (Newman 1998: 125). Training packages, constructed from units of competence that build individual learning programs, position the **outcome** of learning as the critical factor, not the **process of learning**. This training system is based on the idea of performativity, that evidence of competency achieved is available by assessing task performance. How the acquisition of the skills, understandings and knowledge that are written into training package units is to be achieved is not mandated.

A registered training provider delivers the package according to negotiation between trainer/mentor/coach and learner (ANTA 1998) and draws from industry experience to balance the training delivered.

Newman (1998) and Cope and Kalantzis (1997) each highlight the contradictions inherent in a training scheme that both rejects and embraces "Taylorist hierarchies and demarcations of work" (Newman 1998: 116). The National Training Framework is an industry-government construct. At individual industry level, work skills are described and packaged in training kits. The responsibility for training delivery rests with training providers registered under government auspices, but managed either as private or public organisations. The government administers a set of training arrangements but the actual training is increasingly managed by private training organisations. Within this framework the training package model has replaced the idea of the curriculum in vocational training. Industry units of competence are packaged for 'take up' predominantly in the workplace. Butler critiques the packages as "content poor" and "outcomes-oriented" (1998: 15) and considers that the knowledge offered in the packages is "industry relevant" and "just-in-time" while the rhetoric of lifelong learning is employed to encourage workers to adjust and readjust to and for the new economy.

Training under this set of arrangements implies that learning may be demonstrated by observable changes in behaviour in response to the learning environment. The changes, according to Gagne (in Newman 1998: ch. 16), work across what is called a hierarchy of learning where mechanistic learning is represented at one end of the hierarchy, with learning involving "discovery, inventiveness, adventure and perhaps even insight" at the other (in Newman 1998: 125).

So here we have a contradiction. On the one hand, as I have discussed earlier, there is the need for learning in the workplace to respond to new ways of working in changing workplaces. On the other, training is framed within discrete units describing workplace tasks while the processes we understand as learning are not given priority. Further training is increasingly delivered by RTOs with often minimal professional development in the practices of teaching and learning. The interpretation of how learning is best achieved in this new training climate, and therefore an active interpretation and understanding of the training package system in terms of preparation and delivery of training, is vital.

Language, Literacy and Learning

The findings from this study of one group of trainers and trainees and their response to this new system of training are in Part 2 of this paper. Before moving to these research findings I want to think more about language, literacy and learning. To understand the process of learning it is important to think about the role of language in learning and to recognise that through language we classify

and index reality. Also, apart from conveying information, language carries "affective overtones" (Stones 1966: 128). Gagne also tells us that learning a new concept is associated with learning the word that symbolises the concept (in Newman 1998: 127). Language is a tool to identify and organise further examples of an idea and, therefore, intellectual development and language development work together.

The work of the psychologist Vygotsky (in Stones 1966 and in Garton & Pratt 1990) has helped educators understand the function of oral language in teaching and learning. Vygotsky suggests that when language is involved it changes the nature of the learning process; he claims that the optimal learning situation is one of 'situated practice' where both language and actions are congruent. This is termed the 'zone of proximal development' (ZPD). In the ZPD the teacher facilitates student learning through task modelling and concept descriptors, providing a learning situation that challenges the current skills and understandings of the learner. Educators have used the term 'scaffolding' to provide an image for the ZPD. Vygotsky defined ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky in Garton & Pratt 1990: 39). For Vygotsky, such collaborative functioning emphasises the social nature of knowledge acquisition.

Cazden has taken the notion of scaffolding and provided three models of language learning. Vertical scaffolding involves the teacher extending the learner's skills by pushing understandings through questioning; sequential scaffolding occurs as the teacher provides a supportive framework as daily routines are commented upon and language acquired through modelling. Finally direct instruction involves instructing from a knowledge base that is considered useful in a particular time and place (Cazden in Garton & Pratt 1990: 51). Although Cazden's work focused upon the child learner, it seems that the idea of scaffolding can also accommodate the adult learner. Bruner (Stones 1966: 165) also recognised the role of the social in the development of competence, and saw language as a cultural phenomenon through which we adopt and alter cultural mores. In Bruner's theoretical positioning, the individual is an active creator and learner.

The interactionist approach to learning and the use of dialogic learning models expressed through the work of Vygotsky, Cazden and Bruner, are useful ways of imagining learning in the current changing work climate. Billett, McCann and Scott (1999) use the term 'guided learning' to describe the process of novice-expert or trainer-trainee interactions in the workplace. They cite five 'mentor' interventions that are ways to approach guided learning: modelling of activities, coaching to secure procedural knowledge, making knowledge accessible through questioning, and using diagrams and analogies (Billett et al. 1999: 17).

The Australian Bureau of Statistics study, 'Aspects of Literacy', tells us that a large percentage of adult Australians do not have levels of literacy that are considered adequate to manage the literacy demands of everyday life (ABS 1997: 3). McKenna draws from this data "enriched by an international perspective and provid[ing] a unique database for research on effective literacy instruction" (1997: 1) to argue that literacy efficacy, while complex as a construct, is critical as a vehicle for employability and improved economic prospects. One way forward is to provide an "increased emphasis on delivery issues to look at effective learning that transfers from education contexts to work and civil life" (McKenna 1997: 2).

2. Learning for Work, Learning about Work: The Research Project

I now want to turn to the 2000 research 'Putting it all together: learning for work and learning about work in the horticulture industry'. This study was designed to discover how trainers and trainees in one industry view and interpret industry training packages.

In this study learners were encouraged to think and talk about what is productive in workplace learning for them. Questions asked in the guided interviews included: How is learning advanced using industry training packages? What theories of learning do the learners in the study articulate with respect to their own learning? What do trainers say about teaching and learning in their facilitation of learning through the packages?

One research participant talked of learning for work in this way:

> *The way things are expected of people these days, I mean at this workplace and anywhere else, you're expected to ... you go through the learning process and then once you've finished, if you come to the job with all the skills, all the accreditations that you've perhaps done at school or in training you're expected to apply them straight away. And many times you don't know what you are getting, whether they have had the right type of training, so in regard to learning I think there's so many different learning processes now that its hard to gauge what's going to work and what's not going to work. From my experience I've tended to go into a job and say I know nothing about it, and then try and gather experience from other people as well, and then assess that experience yourself on the job on the knowledge you've gained from the training, and I tend to think a lot of people take that type of attitude now, where they're not so gung-ho with coming in and saying, I've done all these courses, and they think they know that people who have had experience in jobs can teach them, so I guess people are learning a lot of things out there and there's a place for both.* (Trainee)

For this trainee, learning was an ongoing process with plenty to learn in the workplace from peers and training course facilitators, from the experiences that envelope the actual work and from off-the-job training. The trainee does stress, however, the importance of learning the job on the job and of transferring learning from other contexts to the conditions of the present work site.

Methodology

This study used a qualitative research strategy, drawing from the principles of naturalistic inquiry (Lincoln & Guba 1985) with analysis informed through the critical inquiry methods espoused by Mezirow et al (1990) and discussed by Carr

and Kemmis (1986). The research built on the work of ALNARC (SA) in 1999 (Trenerry 2000) which was a preliminary investigation of the inclusion of language, literacy and numeracy in industry training packages. The 2000 project is a small-scale, qualitative study conducted with a restricted time allocation for data collection and analysis.

South Australian registered training organisations offering training in the agriculture and horticulture industry were canvassed as potential participants in the study. As a result, self-selection determined the sites for the study. After the first round of letters was sent, the staff of one training provider were enthusiastic about sharing their experiences of the implementation of their industry's training package. This provider made three work sites available for the inquiry.
The research participants included fourteen people involved in the many stages of on-the-job training: 7 workers/learners, 2 workplace trainers, 2 training support personnel (including a literacy support person) and 3 managers/training coordinators/supervisors. The research participants were encouraged to talk about their learning for the workplace and the facilitation of their learning through training packages.

Interviews formed the basis of the data collection process. These included guided interviews conducted on a one-to-one basis, and focus group discussions. A questionnaire was provided for one informant who was unavailable for an interview due to work commitments. These interviews were audiotaped and transcribed for analysis. The research questions (Appendix 1) were the conversation 'starters' in the focus groups and individual interviews. The data has been organised according to the actual pedagogical practices and learning strategies that are utilised as a medium for learning work and about work, and the practices and strategies of enablers in a culture of training. The research data provides productive insights into the training culture and the teaching and learning practices employed by the trainers and trainees in the study. Data relating to learning, workplace learning, and literacy as a vehicle for learning (framed by industry training packages) contextualises the discussion in section one of this paper.

The two areas of interest for this study were:

1. The actual pedagogical practices and learning strategies, both formal and informal, that are utilised as a medium for learning work and learning about work. The focus for this project was the strategies that are specifically related to the definitions of literacy and numeracy operational on the research sites.
2. The practices and strategies set in place by management to promote a culture of training and to integrate a knowledge and understanding of literacy and numeracy practice within that training culture.

Analysis of the data clusters around two organisational levels — the micro level (trainees, training package coordinators, resource developers and trainers) and the macro level (industry partners, centre managers, supervisors). At the micro level the research study revealed four key aspects of the teaching-learning exchange:

1. mutual learning in the work site;
2. oral communication: a critical learning tool;
3. talking about training: metalanguages on the research site;
4. building skills, knowledge and understandings: the balance between theory and practice.

At the macro level, analysis indicated four components of structural support required for learning:

5. professional development opportunities: to advance the skills, understandings and knowledge needs of all training stakeholders;
6. developing and maintaining pathways into and across training: providing access and equity;
7. training review processes to refine industry training packages;
8. training package resource development: an ongoing need.

I will now use the data from the study to build a picture of how trainers and their trainees engage in the process of teaching and learning. I have explored the actual pedagogical practices and learning strategies, both informal and formal, that are utilised as a medium for learning work and learning about work, with specific reference to the definitions of literacy and numeracy operational on the research sites. It was my view that the staff of this RTO were exemplary in their interpretation of the training package for their industry, providing a rich set of learning experiences for their trainees.

The Research Site: One experience of training package implementation

Training packages offer work site training arranged by negotiation between the workplace trainee and the RTO trainer. In many industries the implementation process is still under way, with the release of training packages across industries being phased in from 1997/98. The horticulture training package was first used in early 1999 (see, for example, Trenerry 2000), and for the RTO represented in this study the implementation process occurred over 1999/2000. This RTO worked through the details, issues and relevant work practices to effectively deliver training packages. The RTO team identified their way of working as a close partnership with the state Industry Training Authority Board (ITAB) to fully understand the intent of the package and to question the ITAB training package coordinator in detail on the fine points of the packages. The RTO training team shared information as they planned for delivery and questioned both the ITAB training package coordinator and their research and development manager on aspects of the model that were unclear. One trainer indicated that on

many points it was a matter of "working it out myself". This, it was recorded, "took a lot of effort". Effort was focused upon putting all the paperwork in place, thinking about resources and then "working with the workplace and tying training into the workplace. That's the big thing that we're really focused on".

> *It took a while to just understand how ... to appreciate how they* [the packages] *work in the workplace. You know, I was doing all hands-on* [delivery in the immediate work context], *and then began to realise I need to structure this a bit more in some classroom work for them, just for that structure we still have to learn this information, but making sure that there was a balance with it on the job.* (Trainer)

In fact trainers reported that in the early stages of the implementation process they were ready to fit in with changes to training schedules if the workplace requested such changes, but, with increased confidence in their specific learning program, they were more insistent on a pattern for training as agreed in the original training timetable.

Training for this RTO was more than the gaining of workplace skills specific to a time and place; for them it was critical to build into their training what they termed a "culture of learning". This developing culture was evident in the structure of their training. One key to this was communication.

> *Yes, in fact we've got fairly good communications because we've got such a small team, so yeah, we kind of moved into it before we completely understood it, and it was moving in slowly and then making sure. We had regular meetings with our head of department where issues were brought up or things we didn't understand cleared, and it also gave us an opportunity to talk about things that may have happened on the job that you would have done differently next time, and thus understanding how the packages work.* (Trainer)

Training package implementation is part of a "package of learning" involving an interplay between the development of skills, knowledge and understandings. Communication and critical awareness of the process of learning have an important role.

1. Mutual learning in the work site

Firstly it was found that trainees learnt from their peers on the job.

> *There's so much you can get from a bloke who's been in twice as many years on-the-job experience and he's learnt from scratch ... We feed off each other ... At Tea Tree Road I knew plants and Steve knew weeds.*
>
> (Trainee, pseudonyms used for workplace and trainee)

Respondents also confirmed the value of learning for and about work in the work site and in collaboration with others. The following comments about on-site training confirm the importance of work-based and mutual learning:

> *I guess I learn best when* [pause] *like you can talk to all the people around you, they're all doing the same thing.* (Trainee)

> *And you put it into practice as well, and you can see the results of what you've done too, so that's sort of a success ingredient.* (Trainee)

> *Sometimes with the competencies, you read them and you think "Hell, what does that mean?" but then you actually realise what you're doing in a job is that, it's just wrote* [sic] *differently and you don't want to do that and when someone looks from the outside and goes, "Well you're doing it now", it's just the word.* (Trainee)

Further comments compare the efficacy of decontextualised training with situated practice:

> *You know it's a mock one, it's not real, and all this effort and I'm not going to use it, well* [at work] *at least I'm using it. And we don't feel like you're being tested, like if you make a mistake you sort of "OK, I made a mistake I'll see how I can fix it" but in the classroom you sort of "Oh, I made a mistake, what can I do?"* (Trainee)

These comments from research participants provide an endorsement of the on-the-job training that is framed by the training packages. Under this training system, training and development is positioned within the work site. Skills, knowledge and understandings are developed at the place where they will be (or are being) practised. Trainees interviewed in this study recognised the value of the training that is delivered at the site of their practice. These findings are in line with a socio-cultural constructivist view of learning (Vygotsky in Stierer & Maybin 1994; Billett, McCann & Scott 1999). By interacting in a social setting "individuals construct knowledge" (Billett, McCann & Scott 1999: 13). This is achieved by close interactions with others in the workplace or by attending to cues (language or other) in the workplace environment. From research Vygotsky found that learning is determined "in collaboration with more capable peers" (Garton & Pratt 1990: 39). Applying this to workplace training, it can be said that learning is facilitated by trainers (or coach/mentor, to use the nomenclature of the training package guides) and also by the workers' peers. And here the social nature of knowledge acquisition is evident, as is the role of language in the interactions that are part of the learning process.

There are two 'types' of learning for these horticulture trainees. One involves the vocational content that combines motor skill mastery with the concept attainment described in the underpinning skills and knowledge. Language acquisition takes place as the learner takes up the language of the horticulturalist and adapts to the oral language (speech community) of this field of work. A further field (after Bourdieu) is also available to the learner: the field of training. This will be made accessible to the learners through the culture of training. This is not the culture of a training institution, as it is in an off-site training venue, but the way training is constructed by the workplace and RTO.

2. Oral communication: an important learning tool

This study has found that speaking and listening skills (oral communication) are a primary literate practice of the trainers and trainees in on-the-job training. Certainly the reading and writing skill needs of trainees at AQF certificate levels 1 and 2 are essential for compliance, for instance, with occupational health and safety requirements. The ability to listen and engage in conversation about training is "key to learning in training" (manager). The discussion of mutual learning in the work site (finding 1) indicates that it is through dialogue with, and observation of, colleagues that learning takes place in the work site. Therefore the communicative competence of trainers and trainees must merit attention as an important learning tool.

> *I guess we make a lot of effort to communicate well ourselves to set the example. We try to be as professional in our communication skills in terms of letting anyone know we're coming, and timetables going out, and emphasising points with them, knowing when they're due to come in for training and due to come out, by their own record keeping, which is a big part of the packages because there is always record keeping. I guess there are some of the core competencies, which cover communication skills, and if we felt somebody was lacking, well we'd look at using the learning guides from them to build those skills.* (Trainer)

Trainers indicated that they were watchful of the talk in learning groups, "just to keep an eye on who's saying what or who's contributing, just to give them confidence". This indicated trainer awareness of the value of conversations in the learning process.

It is in the teaching and learning exchange where the trainer and the trainee(s) discuss aspects of learning (encapsulated in the skills, knowledge and understandings in training package units) that the communicative competence of both is practised. Language becomes a central tool for learning. Here conscious techniques need to be applied, such as modelling, scaffolding and direct instruction. And they need to be applied to situated learning in the workplace as they are in informal and formal learning contexts in societal and institutional circumstances. For this to take place training needs to be talked about in conscious and deliberate ways.

3. Talking about training: metalanguages in the work site

The data from my research suggests a need for trainees and trainers to think and talk about their engagement in the training process. A recent study (Boorman 2001) suggests that the implementation of industry training packages demands "understanding and acceptance". While Boorman's study is focused upon institution-based training (it does not include new apprenticeships, and students and trainees who are in employment directly related to their area of study), this research affirms the aforementioned notion of understanding and acceptance.

A culture of training involving a "humane, principled response to training" (manager) is central to the successful implementation of training packages, and

the inclusion of literacy and numeracy in those packages. There are two components of the provision of acceptance and understanding. One is the need for ongoing professional development, and here activities may range from VET or industry-initiated information dissemination workshops to RTO team meetings. One trainer described the usefulness of team meetings in this way:

> *Talking through with each other, looking at what others put in,* [it is] *by trial and error. We've all been training for quite a long time so we do know what works and what doesn't work, so it was really re-assessing our style and saying "OK, this is the new way, what do you reckon?" We have a system that we work to, all the 'hort' trainers, there're five of us, and we have regular meetings so that we all keep up-to-date with what is happening.*

The other indicator is what writers have termed "metalinguistic" understanding (Garton & Pratt 1990) or "metalanguage" (Kamler 1998). A meta-understanding of language is one that will "reflect deliberately on its structure and functions" (Garton & Pratt 1990: 126). This is what Cazden describes as "making opaque the language forms that are normally transparent" (my emphasis, in Garton & Pratt 1990: 126). The WELL literacy support person in this study saw her role as providing this understanding. She said that some trainees "would not have understood [the training instructions] if they had just relied on course materials". Here meaning is extracted from text.

Kamler's (1998: 5) use of the term metalanguage introduces a critical dimension to thinking about training. Texts construct particular versions of the world, and the discourse (attitudes, values and beliefs) operational in texts needs to be understood. A critical understanding of the National Training Framework and its central component, the training package, is important for trainers who must apply them in specific workplaces with specific training needs.

> *I understood the model but actually being able to apply it took a lot of constant effort. I had to keep looking at what we were doing all the time. Now our strongest focus is really on working with the workplace and tying training into the workplace, that's the big thing that we're really focused upon.* (Trainer)

The staff of this RTO worked to understand the model and how it fitted the industry and work site: "we went through our system with him [ITAB training package manager] and talked to him about what we were doing to check that it was OK". The RTO staff in this study did not accept the training package for their industry as an unproblematic 'map' for on-the-job training. They interpreted it as much more than the pared down model as it is often represented. In this way both the content of the training units and the learning needs of the students are addressed. When talking about the resources the RTO had developed one trainer said:

> *These are all ours, we've sourced from different material. It's a case of "OK, we're going to talk about bulbs today. Here's the handout, let's discuss it, look at it", so that when they're on site and they come across a*

bulb they can go "Oh yes, I remember talking about that". And here is the information, rather than another folder that adds to the ream of paperwork that they never look at again.

Again, the learning needs of trainees are part of thinking and talking about training. Training for this RTO is constructed in a way that allows the relational aspects of the teaching-learning exchange to develop: "If your mind is on other problems you don't learn. The first thing really for learners is they've got to be interested ... You can't make somebody learn. They have to want to." The trainer has considered the learning process and acknowledges the need to create an environment that is conducive to learning. Part of this is asking the question "What baggage are they carrying?" and then providing "that bit of extra personal support". (Trainer)

Learning work and learning about work is established in response to the needs of the job as well in response to the learning needs of the worker. Understandings of training at this time, and the associated government imperatives such as the training framework, accountability and benchmarking, along with a sense of the individual's positioning in this, demands a holistic response to the planning and delivery of training in the workplace.

4. Building skills, knowledge and understandings: The balance between theory and practice

The findings of this study suggest that there should be a balance between training situated in the work site (situated practice) and instruction that is most suited to the classroom. There is ongoing tension between on- and off-job training, and classroom-based teaching is often portrayed as not connected to the practices of the workplace and therefore too theoretical. Although situated practice emphasises knowledges that have immediate relevance, some knowledge practices are achieved through direct instruction in the classroom. This is the case for some aspects of primarily on-the-job training:

It took a while to just understand how, to appreciate how they work in the workplace. You know I was at first doing all hands on, and then began to realise I need to structure this a bit more in some classroom work for them, just for that structure of we still have to learn this information, but making sure there was a balance on with it on the job. (Trainer)

This may also be the case for specific once-off training. Trainers and trainees talked of other practices within the industry that were crucial in keeping learning dynamic, interesting, relevant and useful to learning work.

The next four components identified from the data concern structural support to develop and maintain an active culture of learning in the workplace.

5. Professional development opportunities: to advance the skills, understandings and knowledge needs of all training stakeholders

Professional development opportunities were cited as essential to a healthy training culture by all study participants involved in the implementation and delivery of training: trainers, training package coordinators and resource developers, managers and supervisors.

Professional development possibilities exist informally through industry links:

> *I'm a big sharer of information. I'm in horticulture as a job and know all the trainers and all the providers or the people running it so you talk, "How are you approaching this? How are you doing that?", that sort of thing.* (Trainer)

It also happens in the work site as expertise is 'traded' in the training context:

> *"Where supervisors are gaining accreditation this might be intimidating for trainers, however trainers are probably getting very good feedback and are being kept in touch with the industry."*
>
> (Training package resource developer)

Formal professional development openings, such as training workshops available in, for example, industry settings and those conducted by the ITAB and the VET quality branch, were cited as important. This was because of the "flexibility of the package units and the broad interpretation of competencies, elements and performance criteria. Coming to grips with a training system that is now workplace-based and no longer institutionalised makes professional development important." (Training package coordinator)

6. Developing and maintaining pathways into and across training: providing access and equity

The ability to access training and then maintain a successful training pathway was cited as important, particularly for younger trainees. There are a number of arms to the facilitation of this:

i) Entry-level skills

The training package coordinator on the industry site indicated that consultation with the South Australian Department of Education, Training and Employment was necessary to facilitate the progression from school-based curricula to industry-based training. This coordinator was looking more widely than the agriculture and horticulture training package and named gaps in maths skills as a problem for some of the construction-based packages. This made a seamless progression from school to training difficult to achieve.

ii) Access courses

Trainees talked of skills-based short courses for the unemployed as a necessary pathway into training. These access courses provided a 'taster' for work in the field, as well as accreditation for some training package units.

iii) Support throughout the training process

The respondents clearly stated the need for an on-site training culture that removes physical and emotional barriers that trainees or would-be trainees may be experiencing. The ability to identify such learning needs would become a professional development requirement for trainers.

One established method has been the deployment of WELL resource people connected to the ITAB, RTO or workplace. Funding is required to maintain support of this service. The trainees supported the current arrangement of on-site contracts for training. For them workplace funding was attractive, not least because their skills were being developed and acknowledged at a cost to their industry and not to them.

The link between training, gaining accreditation for skills development or recognition (through the RPL process) and increased self-esteem amongst long-term and short-term workers was voiced by the training manager, training package coordinator, trainers and workplace supervisor in this study.

7. Training review processes to refine industry training packages

Attention both to training methods and training content is needed if ongoing and effective on-site training is to be encouraged in a climate based upon a "humane, principled response to training and teaching" (site manager). In this study support for on-site training was strong, and research participants considered industry training packages to be a practical tool in the construction of training in the workplace. Productivity gains for on-the-job training were described by a supervisor in this way: "[there was] not as much lost productivity through travelling time". In addition it was said that workers were more inclined to undertake accredited training in a workplace context making use of the associated human resources and support.

So, while there was support for the training framed by industry training packages, participants indicated the need for review processes to strengthen future training. They cited three key areas for this interest:

- best practice guides for trainers: prescribed standards for best practice in delivery of training should be available to RTOs;
- internal moderation of student learning, involving ongoing supervision of those in training to maintain numbers and to halt drop-out rates; and
- qualifications that are linked to job classifications, indicating a mandatory training requirement for all positions.

8. Training package resource development: an ongoing need

Human resources and resource development have been the focus of the previous three points. Throughout the study respondents were also concerned with the print, IT, audio and video-based resources that allowed training to be undertaken. Training packages were represented as part of a training framework that encouraged trainers "to do more with less" (work-site supervisor). However it was seen as vital that trainers be supported with adequate resources. These may be developed by training bodies, i.e. ITABs, ANTA or WELL, or developed by training providers and specific to the on-site learning needs of their trainees.

> *Well, all our underpinning knowledge material, which is really material based on the old curriculum, we have developed ourselves and structured it, as much as possible, to fit into the workplace.* (Trainer)

This trainer was also cautionary about adopting some external resources, for instance learning guides, and leaving them with the trainee to work through. "That's not workplace learning; that's open learning."

Provision of resource material to suit the learner is critical. Trainers here draw from their own industry knowledge and training experiences to assist them in the development of specific print-based resources.

> *These guys are blue-collar workers who have chosen to be blue-collar workers. They're not academics. We just want to see if they understand the concepts and how to apply them to the job, so* [we] *keep it very simple at this point not to turn them off, and get out there and put it into practice. For some of the things we have been giving just single pages with information on it* [and with the key points] *in bold.* (Trainer)

This trainer, by referring to the 'kind' of workers doing AQF certificate level 1 or 2 training, was cognisant that learning resources needed to be presented in a specific style and form. Trainers suggest that resources should be kept simple; a single page that summarises key learning points is essential for certificates 1 and 2.

Training Packages Through the Eyes of One Trainee: What does Elizabeth say about training?

The aim of this final section of the paper is to track the experiences of training through the eyes of one trainee. This aim is ambitious and, in a sense, the findings offered here can only be a partial explanation of how one worker experiences the training. Nevertheless, the data provides some ways of drawing together the links between the theory and practice emerging from this analysis of workplace training. Many people believe that training packages are a fixed commodity. In this study I have argued that it is in the *interpretation* of the industry training packages that learning for work, and learning work, takes place at this time when the new work order requires new kinds of workers. In the above research findings I have used the data to discuss and interpret the ways in which trainers and trainees work with the training package model to promote

rich and meaningful literate understandings and formulations (after Castleton 1999). Language, literacy and numeracy *are* vehicles for learning in training programs and in the training process.

Below you can hear the voice of one of the trainees, Elizabeth (not her real name), as she talks about the practical and theoretical issues for workplace training at this time. Elizabeth is representative of a new worker for changing times. Elizabeth trains and works in an industry with a lower representation of female workers than male workers. She chose to work and train in the industry because of her positive experience in a horticulture access course for job seekers and "discovered that I actually really, really liked it". Her exposition allows us to hear the story of one trainee's learning experiences with the new training system. It also allows Elizabeth to demonstrate the active interpretation of the new system by one training organisation.

I have taken Elizabeth's comments (taped in a guided interview) and organised them according to the categories that surfaced in the research findings and have focused upon one: **mutual learning in the work site**. It is in this idea of positioning training within everyday work practices that the training package model, as a framework for learning for and at work, is at the same time vigorous and problematic. It is vigorous in the sense that on-the-job training delivers a currency that is immediate and situated in everyday work-site practices. And it is problematic in that good practice requires the kinds of examples of training package interpretation and exploration that I have investigated in this study.

Elizabeth describes how the RTO constructed a learning program that enabled her to move from unemployment into a traineeship:

> *I was unemployed at the time and I actually had a friend who actually worked here and he said "Why don't you try a horticulture access course?", which is just a short course that gives you basic skills so you can do the lower level assistant work on site, and so I started that and got through that at the end of 13 weeks and did very well.*

As a learner in a traineeship program, the flexibility of the training package units allows her training to be built around work schedules and weather patterns.

> *Since I've started with level 3* [certificate 3, horticulture training package] *under the restructured packages the training is really great, much more flexible I found with my situation, it's really good. I have set things that aren't necessarily urgent I suppose, but I have things set aside in terms of training and learning so that I can utilise a rainy day when I can't actually get out there, and so in horticulture particularly that flexibility is really good.*

But flexibility is not just about time and place. A key element of flexible training is the degree to which formal training responds to the kind of local knowledge available through on-site training. In this case trainees and their employing bodies also have some degree of control over what they learn. Training can be made to order. Trainees can choose units appropriate to their work and learning needs in consultation with their training facilitator.

> *Jo* [pseudonym for RTO trainer] *is the person who is actually structuring our training, the person who schedules training days and things like that. First we sit down and assess whether you need to do more work, whether you are fairly up to speed so you only need a day, so we actually sit down and talk through what training I actually need. Jo lets me know what training days she's scheduled in and the subjects* [units] *we'll be doing. There are a number of modules that you need to complete, yes, so you basically sit down with Jo, the person who is organising the assessing, putting together your package for you. You don't get training in the areas that you are not going to be practically carrying out. Sometimes units are added. Just the other day Jo said, "I think I'll put another unit in this area" because it would be good for maintenance of my machinery and things like that.*

Elizabeth tells us explicitly why her training works for her in terms of content, method and interest. Alongside Elizabeth is an energetic and dedicated RTO trainer using industry knowledge (content), learning theory (method) and applying flexibility (interest) to her interpretation of the training package units relevant to the industry. This RTO works in the industry. The RTO staff encourage a culture of mutual learning for the work of the industry, and the work of training. Elizabeth reminds us that the sophisticated process of cross-referencing occurs as she learns for and about work. Learning for and about work also includes the strategies and sense of order that is important to deep learning.

> *Basically we look at the technical and background knowledge that you need to be able to effectively carry out your practical work so, for example, what I am doing at the moment, doing some weed spraying, the underpinning knowledge for that is all your safety chemical use modules — it comes down to manual handling — a bit of maths involved with your calculations of your volumes, and things like that, and also that underpinning knowledge in that respect would be, looking at particularly level 3 now, looking at different products, looking more at the active constituents in the actual products, getting more detailed knowledge so you can utilise that in your practical. When we are doing plant identification or catching up on our files she will get the books out and go with the students and go around and she will say to them "Do you know how to use this book? Do you know how to look up an index?" And will go around and see that they understand how to use it correctly, and if they don't, well, obviously she shows them how to use it.*

In addition learning to learn in this study dovetails nicely with the more positive perspective on on-site workplace learning that is proffered. As Elizabeth points out, her learning is on the job.

> *A lot of the learning is done through actually being on the job and coming across a situation where you might not be sure of which direction to go next or you make a mistake, which will be pointed out by your supervisor.*

> *You don't do it again. You do most of your learning, well I think I do, in the job.*

And the demands of the job determine what knowledge Elizabeth requires to perform work tasks:

> *Well in these weeks that is when you have X pests at very high numbers, and that's when I want to be applying a certain application, things like that, and the underpinning knowledge study is learning different chemicals applications and stuff like that, allows me to be able to basically choose the chemical, know what I am doing, go ahead, do the treatment.*

For Elizabeth the package that is her training provides strong motivation for her as a learner.

> *To be honest I really don't see many down sides to learning. It works really well for me at the moment. Personally I am getting education as well as getting paid work, which is a hell of a lot better than full-time school on Austudy, and I also feel I get much more focused attention than you would in a classroom or more formal situation because you're there one-to-one with the assessor. I also feel really lucky to be with Jo the way she puts it together because I know her personally, how much effort and genuine, I suppose care for the well-being and encouragement and supporting to keep people feeling like they want to keep going, and that reassurance when you're feeling a bit challenged, that it's OK, you will get through it.*

As Elizabeth describes her training experience she gives flesh to the bones of the training packages that are part of her accredited training journey. Elizabeth discusses the training with me through her literate abilities, her training is mediated through a discourse embodying specific literate practices, and literacy is the vehicle for the interactive component of her assessment. Literate practices involving language, literacy and numeracy are a vehicle for learning with training packages.

Appendix 1

Research questions

The question that the South Australian Centre of ALNARC asked in this study was:

In relation to training for work and training at work, what is the role of literacy, language and numeracy as vehicles for learning with industry training packages?

The question was put in relation to the literature on the topics of literacy and workplace learning.

What is the literature telling us about the nature of work, informal learning, learning for and about work and the changing nature of skill development in the contemporary workplace?

- What body of research is helpful in understanding workplace learning?
- What theories about literacy and learning are helpful in thinking about workplace learning?
- What are the current pedagogies of workplace learning?

And then put in interview situations with research participants.

How do workers/trainees understand and use literacy and numeracy in learning about work and learning in the workplace?

- What constructions of literacy and numeracy are foregrounded in training?
- What literate/numerate practices are required in the specific work site?
- What literate/numerate practices are available through the training package model?

How do managers/trainers work to establish a culture of literacy and numeracy learning within skills-based learning?

- What models of learning are employed to deliver training package units of competence?

What are the key factors shaping trainee learning in programs using training packages?

- How do workplace supervisors/trainers/trainees think about literacy and learning?

How do current policy arrangements support workplace learning with the provision of industry training packages?

- What professional support is available for trainers/trainees?
- How do literacy professionals think about literacy and learning?

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